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REMARKS

Claims 1-18 remain in the application. Claims 13 and 14 are withdrawn as being drawn to a nonelected species.

The Rejections:

In the Office Action dated June 20, 2006, the Examiner rejected Claims 1-3, 5-7, 12 and 15 under 35 U.S.C. 102(b) as being anticipated by Fromberg (5,224,570).

Regarding Claims 1-3, the Examiner stated that Fromberg discloses a safety device comprising:

- Retaining element (3),
- An abutment (7) spaced from and fixed relative to said retaining element,
- A braking element (11) movably positioned between said retaining element and said abutment and spaced a distance from said retaining element to accept a portion (4) of a guide rail (5),
- Said braking element having a rest position spaced from the surface of said guide rail,
- A lever mechanism (20, 1, Fig. 1) connected to said braking element for moving said braking element from said rest position to a braking readiness position contacting the surface of said guide rail (at camming surface 13), whereby downward movement of movement of the elevator causes said braking element to be squeezed between the guide surface and said abutment,
- an operating mechanism (6) connected to said lever mechanism for selectively moving said braking element between said rest and readiness positions,
- said braking element is a blocking roller,
- said abutment is angled relative to said retaining element whereby an interspace (2) narrows between said retaining element and said abutment opposite a predetermined direction of motion of the elevator car.

Regarding Claims 5-8, the Examiner stated that Fromberg discloses a safety device comprising:

- a guide (9) along which the position of said braking element is changeable,
- said guide forms an oblong recess,

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- said guide is shaped to hold said braking element in said rest position,
- said operating mechanism which applies a force to his braking element for bringing said braking element into contact with said guide surface and keeping said braking element in a state of equilibrium whereby said braking element is moved automatically relative to said abutment and opposite to the direction of motion of the elevator car.

Regarding Claim 12, the Examiner stated that Fromberg discloses his guide surface (one side of portion 4) is one guide surface of his guide rail (5) and said retaining element (3) is a first guiding element for guiding the elevator car alongside another guide surface (opposite side of portion 4) of the guide rail.

Regarding Claim 15, the Examiner stated that Fromberg discloses safety device having a U-shaped configuration.

The Examiner rejected Claims 4, 8-11 and 16-18 under 35 U.S.C. 103(b) as being unpatentable in view of Fromberg over Rebillard et al (US 6,173,813).

Regarding Claim 4, the Examiner admitted that Fromberg does not disclose his lever mechanism swiveling about an axle, his lever mechanism being ultimately linked to a non-depicted governor or speed limiter (Col. 4, Line 59). The Examiner stated that Rebillard teaches the lever mechanism (94) connected to the braking element (96) of roller form, whereby the lever mechanism swivels around an axle (100) in response to electromechanical actuating means in lieu of the non-depicted mechanical means of Fromberg and it would have been obvious to one of ordinary skill in the art to modify the invention of Fromberg with the teaching of Rebillard to facilitate electromechanical means in keeping with automation.

Regarding Claim 8, the Examiner stated that Fromberg discloses his operating mechanism which applies a force to his braking element for bringing said braking element into contact with said guide surface and keeping said braking element in a state of equilibrium whereby said braking element is moved automatically relative to said abutment and opposite to the direction of motion of the elevator car; however, his automatic motion is in response to the lever mechanism. The Examiner further stated that Rebillard teaches the operating mechanism (bounded by 71, Fig. 5) for automatic movement of the braking element relative to the abutment in response to the deactivation of the operating mechanism, in keeping with a fail-safe operation

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and it would have been obvious to one of ordinary skill in the art to modify the invention of Fromberg with the teaching of Rebillard to provide a fail-safe mode in keeping with conventional, electromechanical control means.

Regarding Claims 9-11, the Examiner stated that Fromberg discloses his operating mechanism as a mechanical device. The Examiner further stated that Rebillard teaches the operating mechanism having a solenoid (20) that "...exerts magnetic force... on said braking linkage..." (Col. 1, Line 58) whereby said braking element is maintained in said rest position. Furthermore, if the solenoid is deactivated, thereby extinguishing the electromagnetic force, the bolt (86) to which the lever mechanism (94) is pivotally connected, is forced by the pre-loaded spring (88) to move the braking element to a brake readiness position, whereby the braking element automatically proceeds to a full braking position in response to the opposite motion of the elevator car and the fixed position of the inclined abutment and it would have been obvious to one of ordinary skill in the art to modify the invention of Fromberg with the teaching of Rebillard to provide a fail-safe mode in keeping with conventional, electromechanical control means.

Regarding Claim 16, the Examiner noted that Applicants have stated that the brake lining of the instant invention is well known to the automotive industry (Para. 54). According to the Examiner, therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize materials common to the automotive industry for brake linings.

Regarding Claims 17 and 18, the Examiner stated that Fromberg discloses:

- first leg and second legs (1a and 9), said first leg having a brake lining (3) attached thereto and said second leg spaced from and fixed relative to said first leg,
- a blocking roller (11) movably positioned between said first leg and said second leg and spaced a distance from said first leg to accept a portion of a guide rail therebetween,
- said blocking roller having a brake rest position,
- a lever mechanism (20, 1, Fig. 1) connected to said braking element for moving said braking element from said rest position to a braking readiness position contacting the surface of said guide rail (at camming surface 13), whereby downward movement of

the elevator causes said braking element to be squeezed between the guide surface and said second leg,

- an operating mechanism connected to said lever mechanism for moving said blocking roller between said rest and braking readiness positions;
- however, the operating mechanism does not move the blocking roller selectively.

The Examiner stated that Rebillard teaches the operating mechanism (bounded by 71, Fig. 5) for movement of the braking element from the brake rest to readiness positions, in automatic response to either an over-speed or similar condition as well as by selective control and it would have been obvious to one of ordinary skill in the art to modify the invention of Fromberg with the teaching of Rebillard to provide an operating mechanism providing either automatic or selective engagement of the braking element, for safety and maintenance purposes.

Regarding Claim 18, the Examiner stated that Fromberg discloses said first and second leg are formed as legs of a U-shaped safety device block (Fig. 2) and an interspace (2) narrows between said second leg and said guide surface opposite the direction of motion of the elevator car.

The Response:

Fromberg shows a safety device for braking an elevator car in an elevator system, the elevator system including at least one guide rail having at least one guide surface thereon. The safety device comprises (the Examiner's identifications of Applicants' claimed elements are in parenthesis):

a brake or braking plate or pad 3 (retaining element);

an extension or projection 7 (abutment) spaced from and fixed relative to the pad 3 (retaining element);

a pressing element in the form of a catching or catch roller 11 (braking element) movably positioned between the pad 3 (retaining element) and the projection 7 (abutment) and spaced a distance from the pad 3 (retaining element) sufficient to accept a portion of a guide rail 5 therebetween, the pressing element 11 (braking element) having a rest position spaced from a guide surface (free leg or leg member 4) of the guide rail 5;

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an actuation arm 20 (lever mechanism) connected to the pressing element 11 for moving the pressing element 11 from the rest position to a braking start position contacting the guide surface 4 of the guide rail 5 whereby when the safety device is mounted on the elevator car and the braking element is in the braking start position, downward movement of the elevator car causes the braking element to be rolled between the guide surface 4 of the guide rail 5 and the projection 7 (abutment) for braking the elevator car; and

a linkage or lever mechanism 19 (operating mechanism) connected to the actuation arm 20 (lever mechanism) for selectively moving the pressing element 11 (braking element) from the rest position to the braking start position.

Applicants' invention defined by Claims 1-18 is a safety device for braking an elevator car in an elevator system, the elevator system including at least one guide rail 30 having at least one guide surface 32 thereon. The safety device includes a retaining element 4, an abutment 5 spaced from and fixed relative to the retaining element, and a braking element 7 movably positioned between the retaining element and the abutment and spaced a distance from the retaining element sufficient to accept a portion of a guide rail therebetween, the braking element 7 having a rest position spaced from a guide surface of the guide rail. Thus, the braking force is applied by the braking element 7 that is squeezed between the guide surface and the abutment.

In contrast, as explained above, Fromberg uses a pressing element 11 which is rolled between the guide surface 4 of the guide rail 5 and the projection 7 for moving the pad 3 into engagement with the guide surface 4 and braking the elevator car. This configuration is shown in Figs. 1 to 3 where the end surfaces 10a of the cam 9 serve as roller tracks 10. The pressing element 11 has an axle 12 that rolls on the tracks 10 and generates a pressing force to the braking plate 3 which itself generates the main braking force.

Applicants' safety device includes: a lever mechanism 8 connected to the braking element 7 for moving the braking element 7 from the rest position (Fig. 6) to a braking readiness position (Fig. 7) contacting the guide surface 32 of the guide rail 31 whereby when the safety device is mounted on the elevator car and the braking element 7 is in the braking readiness position, downward movement of the elevator car causes the braking element 7 be squeezed between the guide surface 32 of the guide rail and the abutment 5 for braking the elevator car; and an

operating mechanism 3 connected to the lever mechanism 8 for selectively moving the braking element 7 between the rest position and the braking readiness position.

Fromberg shows the actuation arm 20 (lever mechanism) connected to the roller 11 (braking element), but the bracket member 6 (operating mechanism) is not connected to the actuation arm 20 (lever mechanism) for moving the roller 11 (braking element) from a rest position to a braking start position as recited in Applicants' claims. As explained in Col. 4, Lines 56-68, the actuation arm 20 (lever mechanism) moves the roller 11 (braking element) and the bracket member 6 moves in response to the shift in position of the roller axle 12.

Applicants' operating mechanism also selectively moves of the braking element 7 between a rest position and a braking readiness position. This feature allows the braking device to be brought in a controlled way into different operating states, especially into a braking readiness position, which allows realization of a creeping protection device, for example, as explained in the specification (Page 10, Lines 12-22).

Fromberg does not contemplate a braking readiness position. The actuation arm 20 pulls the roller 11 directly from a rest position (solid line in Fig. 1) to a braking position (broken line in Fig. 1) as explained in Col. 5 at Lines 2-11.

Rebillard does not provide Applicants' claimed elements missing from Fromberg.

The Examiner stated that the prior art made of record and not relied upon is considered pertinent to Applicant's disclosure. The Examiner cited Muff et al (6,758,210 B2) and Ericson et al (5,002,158) for reference of a safety brake with pivoting lever actuated blocking roller and spring actuated braking means, as well as a safety-braking disc using blocking rollers. Applicants reviewed these references and found them to be no more pertinent than the prior art relied upon by the Examiner in the rejections.

In view of the above arguments, Applicants believe that the claims of record now define patentable subject matter over the art of record. Accordingly, an early Notice of Allowance is respectfully requested.

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